



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/277,171	03/26/1999	CAMERON BOLITHO BROWNE	169.1167	3147

5514 7590 07/10/2006

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

AMINI, JAVID A

ART UNIT	PAPER NUMBER
----------	--------------

2628

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/277,171

Applicant(s)

BROWNE, CAMERON BOLITHO

Examiner

Javid A. Amini

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 11 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 13-26, 29-38 is/are rejected.
- 7) ☒ Claim(s) 7-12, 27 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/11/2006 has been entered.

Response to Arguments

Applicant's arguments with respect to claim 1-38 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 7-12 and 27-28 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The focal points are adjacent to a center of its associated shape element, and the opacity of shape element varies with distance from the focal point, see figs. 11-12.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17, 18, 20, 21, and 33 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 17, claims the color are varied in a cyclic fashion. The definition for the term “cyclic fashion” could not been found in the specification. In Re. to claim 18 contains similar term as “cyclic color”, in claims 20, 21, 33 used the terms “cyclic fashion” and cyclic opacity”.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 21 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: Applicant needs to verify the following statement: The claim claims that the period is selected at random for each element. As Applicant illustrates in fig. 12

Art Unit: 2628

the shape of each element considered as shape of a circle, and they are overlapped each other.

Then a question rose: Dose the selected period apply just for each circle that is not overlapped?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 13-16, 19, 22-26, 29-32, and 34-38 rejected under 35 U.S.C. 103(a) as being unpatentable over *Kenji Shimada, David C. Gossard*, with title of “Bubble mesh: automated triangular meshing of non-manifold geometry by sphere packing” (hereinafter refers as Kenji), and *Kurt W. Fleischer, David H. Laidlaw, Bena L. Currin, Alan H. Barr*, with title of “Cellular texture generation” (hereinafter refers as Kurt).

Examiner's Note: both prior arts are previously cited by the Examiner's 892 on 7/28/2005.

1. Claims 1, 24, 29, 30, 32, 34, 36 and 38.

Claim 1, “a method of generating a colored or shaded texture for images to be displayed on a display device or printed, said method including the steps of: Kenji on page 417 in fig. 8 illustrates the preamble's limitations.

Kenji on page 413 in fig. 3 teaches a plurality of shape elements, each shape element defining a surface, and Kenji in fig. 8 teaches each of the shape elements with an opacity which varies over its surface.

Kenji in fig. 5a illustrates a plurality of substantially equidistant points within predetermined region of the images. Kenji on page 414 left column at third paragraph teaches the length is equal to the distance between the centers of two adjacent bubbles.

Kenji in fig. 3 illustrates different shape elements i.e. Delaunay triangles, Voronoi polygons, and packed bubbles. Kenji teaches in fig. 8 by placing a shape element at each identified point (see Kenji's fig. 1 that converts a CAD model into a mesh), such that adjacent shape elements overlap with each other to fill the predetermined region of the images such that the region when so filled has a substantially uniform opacity, Kenji on page 412 at second paragraph teaches in packing bubbles, some gaps and overlaps are inevitable, so our aim is to minimize these gaps and overlaps as much as possible by injecting an appropriate number of bubbles and placing them at suitable locations, see Kenji's fig. 3b.

Kenji is silenced about rendering the shape elements for output; however, Kenji on page 414 at 3.3 teaches the interbubble forces that causes the shape element closely packed. On the other hand Kurt's work involves making images of surfaces covered with interacting geometric elements, such as scales, feathers, thorns, and fur. Kurt in fig. 2 illustrates the cellular particle simulator computes the locations, orientations, and other values associated with the cells. This information is converted to geometry and appearance parameters, which is then passed to a renderer to create the image. Note that the cell orientations (red arrows) become the orientations of the thorns. Using a geometric modeler, we created a geometric object that changes shape from a bump to a thorn based on a single parameter. Kurt on page 242 at 4.2 defined an element shape i.e. a cell that has position, orientation, shape and an arbitrary length state vector for parameters such as chemical concentrations in a reaction-diffusion simulation. See following part of the

Art Unit: 2628

claim invention: rendering the shade elements for output to a printer or display device, such that an interference of the opacities of the overlapping elements generates a colored or shaded texture.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute applicant's described structure, by adding Kurt's software renderer (see page 241, 3 at second column) into Kenji's interbubble force to implement the addition of cell-cell interaction, orientation constrains and surface constrains to a more traditional element shape simulator. This modification would have been beneficial to a user to compare results from different methods.

2. Claims 24, 29, 30, 32, 34, 36 and 38 are rejected similar to the rejection of claim 1.

3. Claims 2-6 and 25-26,

See fig. 3 of Kenji.

4. Claims 13-15,

Kurt on page 239 under the "introduction" teaches that the cells interact to form *cellular textures*: surface textures with 3-D geometry, orientation, and color. Also on page 244 under the "Particle Converter" teaches experimenting with various colorations and geometries using the same simulation dataset.

5. Claim 16,

Kurt on page 243, section 4.3 teaches the form of cell programs involved time.

6. Claim 19,

The step of claim language is obvious, because by varying the opacity of a shape over time, the shape rendering changes over time.

Art Unit: 2628

7. Claim 22,

The step is obvious, because the shape elements must have boundary, and the texture applies within the boundary.

8. Claims 23, 35 and 37,

The two prior arts do not exactly defined the closed curve by a font character outline, however, Kenji on page 409 under the “introduction” teaches the whole product development time, it is therefore desirable to computerize analysis by using numerical methods such as the finite element method (FEM) and the boundary element method (BEM). Examiner’s note: the shape element may be shown as a font character, e.g. font character “O” or “Q” or “8”.

9. Claim 31,

The claim limitations are obvious because, Kurt on page 242 under “cell program” teaches each cell has several cell programs, which are first order differential equations describing how its state changes over time. Examples are given in Table 1 and Section 4.3. A cell program is a function of the cell’s current state S and its environment as expressed by A . Different types of cells use different cell programs or different combinations of the same cell programs to define their behaviors. Even if two cells share the same set of cell programs, they will generally behave differently because they experience different local conditions depending on their position. The entire system of differential equations to be solved is obtained by superposing ordinary differential equations from the cell programs for every cell. Additional equations arise from computation in the environment (e.g., diffusion of chemicals, although this is not in the current 3-D implementation).

Conclusion

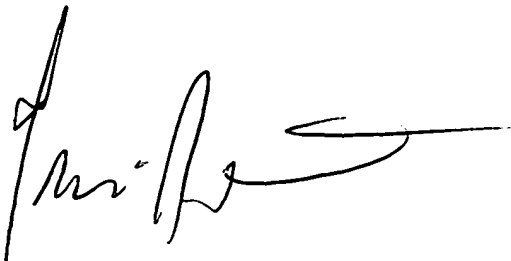
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A. Amini whose telephone number is 571-272-7654. The examiner can normally be reached on 8-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Javid A Amini
Examiner
Art Unit 2628

Javid Amini

A handwritten signature in black ink, appearing to read 'Javid Amini', with a long horizontal flourish extending to the right.